

**RECEIVED  
CENTRAL FAX CENTER**

Page 3/8

AUG 12 2009

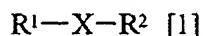
Application Number 10/539188  
Response to the Office Action dated May 12, 2009

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A method for deuteration of a compound represented by the general formula [1]:



wherein, R<sup>1</sup> represents an alkyl group, an alkyl group having at least one carbon-carbon double bond and/or at least one triple bond, an aralkyl group, or an aralkyl group having at least one carbon-carbon double bond and/or at least one triple bond; R<sup>2</sup> represents an alkyl group or an alkyl group having at least one carbon-carbon double bond and/or at least one triple bond, an aryl group, an aralkyl group, an alkoxy group, an aryloxy group or a hydroxyl group; X represents a carbonyl group or a hydroxymethylene group; R<sup>1</sup> and R<sup>2</sup> may form an alicyclic ring together with a carbon atom contained in X; provided that R<sup>2</sup> represents an alkyl group, an alkyl group having at least one carbon-carbon double bond and/or at least one triple bond, an aryl group or an aralkyl group when X is a hydroxymethylene group,  
comprising reacting the compound represented by the general formula [1] under neutral condition with a deuterated solvent other than D<sub>2</sub>O<sub>2</sub> in the co-presence of an activated catalyst selected from a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst;

provided that when the compound represented by the general formula [1] has at least one carbon-carbon double bond and/or at least one triple bound, the catalyst activated in advance is used as the activated catalyst.

2. (Original) The method for deuteration according to claim 1, wherein X is a carbonyl group in the general formula [1].

Application Number 10/539188  
Response to the Office Action dated May 12, 2009

3. (Original) The method for deuteration according to claim 1, wherein X is a hydroxymethylene group in the general formula [1].

4. (Canceled)

5. (Previously Presented) The method for deuteration according to claim 1, wherein the deuterated solvent is deuterium oxide (D<sub>2</sub>O).

6. (Previously Presented) The method for deuteration according to claim 1, wherein the activated catalyst is one obtained by activating a non-activated catalyst selected from a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst by contacting with hydrogen gas or heavy hydrogen gas.

7. (Previously Presented) The method for deuteration according to claim 6, wherein the contact of the non-activated catalyst with hydrogen gas or heavy hydrogen gas is conducted in a deuteration reaction system.

8. (Previously Presented) The method for deuteration according to claim 1, wherein the activated catalyst is a catalyst comprising an activated palladium based catalyst.

9. (Original) The method for deuteration according to claim 8, wherein the activated palladium based catalyst is an activated palladium carbon.

10. (Original) The method for deuteration according to claim 8, wherein the catalyst comprising an activated palladium based catalyst is a catalyst comprising an activated palladium catalyst and an activated platinum catalyst.

Application Number 10/539188  
Response to the Office Action dated May 12, 2009

11. (Previously Presented) A method for deuteration of a compound represented by the general formula [1]:

$R^1-X-R^2$  [1]

wherein,  $R^1$  represents an alkyl group, an alkyl group having at least one carbon-carbon double bond and/or at least one triple bond, an aralkyl group, or an aralkyl group having at least one carbon-carbon double bond and/or at least one triple bond;  $R^2$  represents an alkyl group or an alkyl group having at least one carbon-carbon double bond and/or at least one triple bond, an aryl group, an aralkyl group, an alkoxy group, an aryloxy group or a hydroxyl group;  $X$  represents a carbonyl group or a hydroxymethylene group;  $R^1$  and  $R^2$  may form an alicyclic ring together with a carbon atom contained in  $X$ ; provided that  $R^2$  represents an alkyl group, an alkyl group having at least one carbon-carbon double bond and/or at least one triple bond, an aryl group or an aralkyl group when  $X$  is a hydroxymethylene group,

comprising reacting the compound represented by the general formula [1] under neutral condition with a deuterated solvent in the co-presence of an activated catalyst selected from a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst;

provided that when the compound represented by the general formula [1] has at least one carbon-carbon double bond and/or at least one triple bound, the catalyst activated in advance is used as the activated catalyst, and

the compound represented by the general formula [1] is tricyclo[5.2.1.0<sup>2,6</sup>]decan-8-ol, and the activated catalyst is a catalyst comprising palladium carbon and platinum carbon.

12. (Original) Tricyclo[5.2.1.0<sup>2,6</sup>]decan-8-ol wherein deuteration ratio thereof is 60% or more.

13. (Previously Presented) The method for deuteration according to claim 1, provided that when the compound represented by the general formula [1] has at least one carbon-

Application Number 10/539188  
Response to the Office Action dated May 12, 2009

carbon double bond and/or at least one triple bound, hydrogen gas or heavy hydrogen gas is not present in a deuteriation reaction system.